

## LAPORAN PENELITIAN

### **PENGARUH KEKUATAN LENGAN, KETEBALAN LEMAK, DAN *BODY MASS INDEX* TERHADAP PRESTASI RENANG GAYA *CRAWL* 50 METER**

ERMAWAN SUSANTO, S. Pd  
SUBAGYO, M. Pd

#### Abstrak

Penelitian ini bertujuan untuk mengetahui pengaruh antara kekuatan tarik dan dorong lengan, ketebalan lemak, dan *body mass index* terhadap prestasi renang gaya *crawl* 50 meter. Hasil penelitian ini diharapkan dapat membantu mengetahui faktor-faktor yang mempengaruhi prestasi renang gaya sprint khususnya gaya *crawl*.

Penelitian ini menggunakan metode survai. Populasi dalam penelitian ini adalah atlet yang tergabung dalam perkumpulan renang Tirta Alvita di bawah Pengurus Provinsi PRSI D.I. Yogyakarta. Populasi berjumlah delapan orang semuanya digunakan sebagai sample sehingga disebut sample total. Instrumen yang digunakan adalah 1) *pull and push strength test dynamometer* untuk mengukur kekuatan tarikan dan dorongan lengan, 2) *skinfold thickness* untuk mengukur ketebalan lemak, 3) perhitungan *body mass index* atau berat badan ideal dengan menghitung tinggi badan dan berat badan, dan 4) prestasi renang gaya *crawl* 50 meter yang diambil dari hasil kejuaraan terakhir yang berlangsung di Kolam Rengan Tirta Kembar Purwokerto pada tanggal 29 Agustus 2006.

Hasil penelitian ini menunjukkan bahwa: 1) tidak ada pengaruh yang signifikan antara kekuatan tarik dan dorong dengan prestasi renang gaya *crawl* 50 meter, ditunjukkan dengan koefisien determinan (R) sebesar 0.165; 2) tidak ada pengaruh yang signifikan antara ketebalan lemak dengan prestasi gaya *crawl* 50 meter, dengan koefisien determinan (R) sebesar 0.085; 3) ada pengaruh yang signifikan antara *body mass index* dengan prestasi renang gaya *crawl* 50 meter, dengan koefisien determinan (R) sebesar 0.008.

**Kata Kunci:** renang, kekuatan tarik-dorong, ketebalan lemak, *body mass index*

## A RESEARCH REPORT

# THE INFLUENCES OF ARM STRENGTH, SKINFOLD THICKNESS, AND BODY MASS INDEX TOWARDS 50-METER-CRAWL-STYLE SWIMMING ACHIEVEMENTS

ERMAWAN SUSANTO, S. Pd  
SUBAGYO, M. Pd

### Abstract

The objective of this research study is to reveal the influences of pull and push strength of arms, skinfold thickness, and body mass index towards 50-meter-crawl-style swimming achievements. The results of this research are expected to reveal the factors influencing the achievement on swimming, especially in the crawl style.

This research used the survey method. The populations involved in this research were the athletes of Tirta Alvita Swimming Association under PRSI D.I. Yogyakarta (National Swimming Association Yogyakarta). The populations of this research were 8 athletes who were also the samples of this research since it used the total sample technique. The instruments used in this research were 1) pull and push strength test dynamometer to measure the arm strength in pulling and pushing, 2) skin fold thickness to measure fat thickness, 3) body mass index of ideal body weight to measure body height and weight, and 4) the achievements in 50-meter-crawl-style swimming taken from the latest swimming championship held in Tirta Kembar swimming pool, Purwokerto on 29 August 2006.

The results of this research show that: 1) there were no significant influences of the pulling and pushing strength to the achievement of 50-meter-crawl-style swimming, demonstrated by the coefficient of determinant (R) 0.165; 2) there were no significant influences of skin fold thickness to the achievement of 50-meter-crawl-style swimming demonstrated by the coefficient of determinant (R) 0.085; 3) there were significant influences of body mass index to the achievement of 50-meter-crawl-style swimming demonstrated by the coefficient of determinant (R) 0.008.

**Key words:** swimming, the pulling and pushing strength, skin fold thickness,, body mass index